

B. MELZER.
 METHOD OF MAKING SOLID COLORED BODIES.
 APPLICATION FILED MAY 26, 1910.

1,000,425.

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Fig. 1.

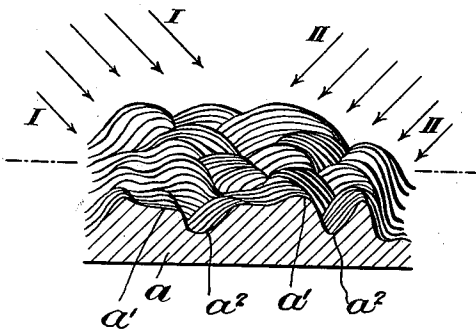


Fig. 2. Fig. 3.

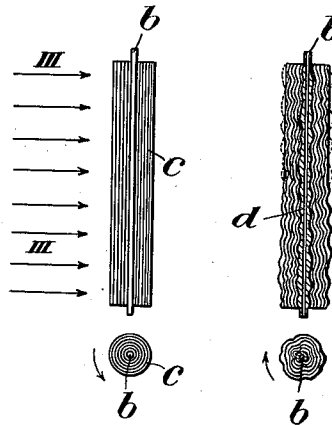


Fig. 4.

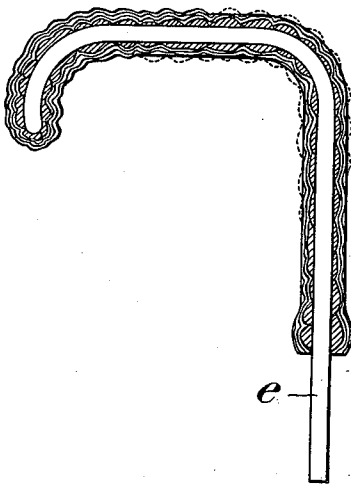
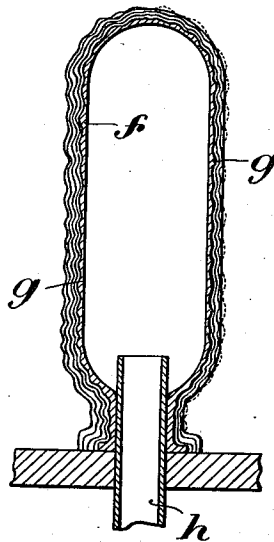


Fig. 5.



Witnesses:
 Geo. C. Heinicke
 J. E. Hehlen.

Inventor:
 Bruno Melzer
 By B. Singer
 Attorney

UNITED STATES PATENT OFFICE.

BRUNO MELZER, OF HETSCHBURG, NEAR WEIMAR, GERMANY.

METHOD OF MAKING SOLID COLORED BODIES.

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To all whom it may concern:

Be it known that I, BRUNO MELZER, a subject of the Emperor of Germany, residing at Hetschburg, near Weimar, Grand Duchy of Saxe-Weimar-Eisenach, Germany, have invented certain new and useful Improvements in Methods of Making Solid Colored Bodies, of which the following is a specification.

The subject matter of the present invention is a novel method or process for making solid colored bodies, and has more particular reference to the formation of artificial bodies which imitate onyx, agate, jasper, various colored stone designs, and the like.

According to the processes heretofore known for producing such artificial materials, separate layers having different colors have been formed around cores, and then the different layers were integrally united by compression. In a like manner, a plurality of veneers were formed and superposed on each other, and the formed body embossed in such a way that elevations and depressions were formed, and thereafter the block or body was cut through horizontally. These known methods have given very unsatisfactory products, as at best they were poor imitations of the fine graining of the minerals and wood which they were supposed to imitate.

According to the present invention however, a product is obtained as a result of the novel method herein described, which exhibits the finest and most delicate graduation in the layers of colors, and consequently an imitation is had of various varieties of natural wood and minerals, such as agate, jasper, malachite and the like, which is true to nature in every respect.

The essential features of the present invention consist in applying layers of suitable composition having different colors to a foundation or bed having a rough surface, or on bodies round in cross section, such as bars, wires, pipes and the like; the layers are applied by squirting or suitably precipitating the material of which the layers are composed.

According to my new method, ornamental plates which imitate minerals, such as onyx, agate, and the like, may be formed and used for table tops and to decorate any surface desired, or cane and umbrella handles and hollow bodies of any description can be pro-

duced, such bodies produced according to this process being always a perfectly natural imitation of wood or stone. The material of which the layers are produced consists of paper pulp with suitable albuminous materials and the proper coloring matters. These materials may be either applied by air or steam-blast to the foundation or bed, or they may be precipitated or deposited onto such foundations.

The manner in which the invention is effected may be illustrated more or less conventionally in the accompanying drawings, in which:—

Figure 1 is a diagrammatical view representing the manufacture of plates suitable for use for any decorative purpose such as walls, table tops and the like; Figs. 2 and 3 are views representing the method of formation when it is desired to produce rod-shaped bodies; Fig. 4 is a view illustrating the method of formation of a cane handle which is to be made according to the improved method in imitation of natural minerals or the like; and Fig. 5 is a view representing the method of formation of a hollow body having a surface in imitation of wood or minerals.

Referring to Fig. 1, *a* represents a bed or foundation, the same being provided with a roughened surface consisting of elevations *a*¹ and corresponding depressions *a*². Upon the bed *a*, layers of material are applied from different directions, by squirting or dusting, the direction of application being shown by the arrows I and II. When applying the layers, a suitable colored composition may be formed, for instance, it may consist of paper pulp mixed with casein and a coloring material; this mixture is diluted with water, and the liquid material is squirted onto the bed or foundation *a* until a sufficient precipitation of solid material has been effected. The layer thus produced is allowed to dry; then another composition having a lighter or darker tint than the composition forming the first layer is formed, and this is applied over the first layer, but is applied in a different direction to that in which the said first layer was applied. The second layer thus produced is allowed to dry, and the third layer, having a different color from either of the layers first applied is compounded and applied in still a different direction. This process is repeated until gradually the

layers constitute a sufficient thickness so that the uneven places are filled up and a block of any required size has been formed. All of the precipitations are effected in exceedingly fine layers and from different directions; when thus applied the layers of the different tints or colors blend delicately into each other, and if desired a greater quantity of one composition of a certain color may be applied from one certain direction than the amount of another layer which is precipitated from a different direction, so that a streaking effect which closely resembles agate, malachite, or the like is realized.

When for any reason, it is difficult to produce a desired effect in the manner just described, the method may be carried out as follows: A suitable bed or foundation having a roughened or uneven surface as above described is arranged in a suitable vessel, which latter is filled up with the above described composition, which has been suitably diluted. This is allowed to rest until the solid material to form a layer has been deposited on the bed or foundation; the remainder of the composition is then removed from the vessel, in order to allow the precipitated layer to dry. Another composition having a tint darker or lighter than that first prepared, by the use of a different coloring material, is formed and is placed in the vessel. This is allowed to precipitate onto the bed or support and the first layer, and then the remainder of the composition is removed as in the first instance, so that the second precipitated layer is allowed to dry. This operation is repeated until the layers or blocks of the desired thickness and having the desired design are produced, the color of the composition either being changed after each operation, or the use of certain colors being repeated so as to effect certain designs.

When it is desired to produce bars suitable for lathe work and the like, a small wire or bar of metal or similar substance is used as the foundation or support for the layers which are to be applied. Referring now to Figs. 2 and 3, a method for the formation of such bodies is here conventionally illustrated. In Fig. 2, *b* represents the wire foundation for the layers to be applied thereon. A composition to form the layers is produced in the manner set forth in connection with the description of the method according to Fig. 1, and is applied in the direction of the arrows III; at the same time the wire support is rotated in one direction. After one layer having a certain color has been applied and is allowed to dry and set, another layer having a different color is applied on top of the first layer, and the process repeated until a bar of the desired diameter has been obtained. When this bar is cut away in the

lathe, the surfaces of the cut-away parts will exhibit the streaking and graining similar to that of the wood or stone which it is desired to imitate. When it is desired to form bars or approximately circular bodies whose surface will exhibit all over the grained and streaked effect desired, that is, without the necessity of any lathe work, a wire or small bar *b* having projections or irregularities *d* on its surface, is provided, as shown in Fig. 3. When applying the layers of colored composition, bar *b* is rotated in a certain direction until a sufficient thickness of one layer has been deposited thereon. When applying another layer having a different colored composition, the bar is rotated in a contrary direction to that assumed in the first instance. As the colors of the composition are changed for the application of each successive layer, the direction of rotation given the bar *b* during the application of the layer is changed, until a bar or body of sufficient desired thickness has been obtained, and after the same has been allowed to dry, its surface will exhibit the streaked and grained effect of the material which it is desired to imitate in the same manner as a body formed according to the method described in connection with Fig. 1, and without the necessity of lathe work to indicate the grained effect. Bars or circular bodies produced according to these methods may be compressed to an oval or similar shape, if desired.

In a similar manner, handles for canes and umbrellas or the like may be produced. When a cane handle, for instance, is to be formed, a foundation wire *e* having the bent shape as shown in Fig. 4 is provided and the different layers of variously colored compositions may be applied thereon either from one direction while at the same time rotating the wire in alternating contrary directions, or the composition may be applied from different directions, in the manner described in connection with Fig. 1. When forming cane or umbrella handles in this manner, the wire support should have elevations and depressions in the same manner as the base support of Fig. 1.

Fig. 5 represents a mode of effecting the formation of hollow bodies having a surface characteristic of the effects produced according to the present invention. When a hollow body whose surface is to exhibit an imitation of natural substances such as wood or stone is to be formed, a hollow rubber foundation or form *f* is provided which is inflated to any desired extent by means of air issuing through the pipe *h*. The said rubber form or support *f* should be provided all over its surface with elevations *g* and the corresponding depressions between said elevations. The different

layers of colored composition are then applied over the whole of the surface of the said rubber foundation *f* in the same manner as in the method according to Fig. 1, that is by applying each layer from a different direction from that of the preceding and successively applied layers. After the applied layers have set and dried, the tube *h* is withdrawn, and the rubber form or support *f* is withdrawn from the interior of the formed hollow body by pulling it through the space formerly occupied by the tube *h*.

In all of the operations described, as the surfaces harden, a shrinkage of the corresponding layer takes place, which action exerts a concentric outer pressure on the inner layer or layers, thus insuring a firm combination of the layers with each other and with their beds or foundations *a, b, e, f*.

The colored bodies made according to the new method are later finished and polished and have the exact appearance of valuable woods and natural stones which it is desired to imitate.

I claim:—

1. The method of producing solid colored bodies having a surface in imitation of natural woods, stone, and the like, which consists in providing a suitable foundation or bed, then applying a layer of suitably colored composition by squirting the same onto said foundation, allowing the layer thus applied to dry, then applying a second layer of composition having a different tint or color from that of the composition first applied by squirting the composition in a direction different from the direction of application of said first layer, allowing to dry, then applying a plurality of layers of composition over said two layers each having a suitable tint or color and applying each layer from a direction different from the direction of application of the previously applied layer, and finally finishing the solid colored body thus produced.

2. The method of producing solid colored bodies having a surface in imitation of natural woods, stone, and the like, which consists in providing a suitable foundation or bed having a surface provided with ele-

vations and depressions, then applying a layer of suitably colored composition by squirting the same onto said elevations and into said depressions, allowing the layer thus applied to dry, then applying a second layer of composition having a different tint or color from that of the composition first applied by squirting the composition in a direction different from the direction of application of said first layer and into said depressions and over said elevations and said first layer, allowing to dry, then applying a plurality of layers of composition over said two layers each having a suitable tint or color and applying each layer from a direction different from the direction of application of the previously applied layer, allowing said layers to dry, and finally finishing the solid colored body thus produced.

3. The method of producing solid colored bodies having a surface in imitation of natural woods, stone, and the like, which consists in providing an elastic foundation having a surface provided with elevations and depressions, then applying a layer of suitably colored composition by squirting the same onto said foundation, allowing the layer thus applied to dry, then applying a second layer of composition having a different tint or color from that of the composition first applied by squirting the composition in a direction different from the direction of application of said first layer, allowing to dry, then applying a plurality of layers of composition over said two layers each having a suitable tint or color and applying each layer from a direction different from the direction of application of the previously applied layer, allowing said layers to dry, withdrawing said elastic foundation from the interior of the thus formed hollow body, and finally finishing the colored body thus produced.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

BRUNO MELZER.

Witnesses:

ERNST EBERHARDT,
CHAS. BORNGRAEBER.